Benign thyroid cysts false-positive diagnosed by fine-needle aspiration cytology (FNAC): A case report

Yanli Zhu, Qian Wang, Lixin Zhou, Wenhao Ren
Department of Pathology, Beijing Oncological Hospital, Beijing, China

Clinical Presentation

A 78-year-old female was referred to our hospital present with bilateral thyroid nodules. Thyroid ultrasound revealed partially cystic nodules larger of the left measuring 7.4×6.6×3.3cm.

Cytological Findings

FNAC revealed paucicellular, composed of hemosiderin-laden macrophages and a few of small cohesive flat sheets that mainly consisted of elongated cells with defined cell borders, nuclear enlargement, fine chromatin, abundant cytoplasm, and small distinct nucleoli, consistent with classic reparative cyst-lining cells. However, some atypical cyst-lining cells manifested polygonal shape with moderate to abundant eosinophilic cytoplasm, occasional enlarged irregular nuclei with increased chromatin and prominent nuclear grooves. Therefore, the cytologic diagnosis was suspicious for papillary thyroid carcinoma (PTC). Histological examination showed nodular goiter with hemorrhage and cystic degeneration containing atypical follicular cells hyperplasia.

Discussion

The majority of cystic thyroid nodules are benign and don’t require surgical intervention. The role of FNAC is limited in evaluating cystic nodules and the false-negative diagnosis of malignant cysts is well demonstrated in the literature (1, 2). However, few authors emphasized the atypical cyst-lining cells may bring about false-positive, and fully illustrated the cytologic and histologic features of atypical cyst-lining cells and stated that cystic thyroid nodules showing atypical cyst-lining cells can result in unnecessary surgery (3, 4). Consistent with the opinion of the authors, atypical cyst-lining cells lacked nuclear crowding, indeed intranuclear pseudo-inclusions, and papillary architecture that possessed by cystic papillary carcinomas (3), and if atypical features are seen in a smear with paucicellular background the diagnosis of PTC should be done only if we find unequivocally nuclear features of PTC (4). Accurate identification of the atypical cyst-lining cells and its background contribute to distinguish the benign nature of cystic thyroid nodules and avoid unnecessary operation.

REFERENCE